UNITED
NATIONS

ST

Secretariat

Distr.
GENERAL

ST/SG/AC.10/C.3/1997/26
25 April 1997

Original : ENGLISH

COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS

Sub-Committee of Experts on the Transport of Dangerous Goods

(Thirteenth session, Geneva, 7-17 July 1997, agenda item 5 (b))

GLOBAL HARMONISATION OF SYSTEMS OF CLASSIFICATION AND LABELLING OF CHEMICALS

Joint ILO/UN Working Group on harmonized classification criteria for flammability and reactivity

Presented by the Chairman of the working group

Guidance document

Aim of document

This document offers general guidance on how to proceed with proposals for harmonized classification criteria for flammability and reactivity of chemicals in the light of the work already done and the results achieved. The concrete technical work should be done on the basis of documents of member states and other delegations; these are not anticipated by this document.

GE.97-21239 a:\1997/26e

Introduction

The United Nations Conference on Environment and Development (UNCED) decided in Rio 1992 - inter alia - to harmonize the existing systems for classification of chemicals and to require the development of a set of harmonized classification criteria for dangerous chemicals suitable for all classification and protection purposes - especially in legislation of international, regional or national bodies.

In december 1994 the Committee of Experts on the Transport of Dangerous Goods (UN-CETDG) - on request and together with the International Labour Office (ILO) as focal point - established two Joint Working Groups (JWG). They should work out on a consensus basis the relevant hazard levels, criteria and cut-off values for the physical-chemical hazards, especially for flammability and reactivity.

The results achieved on several criteria, the status reached so far on further criteria and the questions not yet solved for some remaining criteria - and therefore needing further work by the JWG - were accepted by the UN-CETDG in december 1996 (see report in ST/AG/AC.10/23/Add.4); a request from ILO to continue the work in the next biennium and to finish the proposals for harmonized criteria was adopted. Taking into account the progress made, the UN-CETDG decided to merge both working groups and to hold two meetings of the JWG in July and December 1997 (see ST/SG/AC.10/23/paras. 147 and 204).

The report was transmitted by ILO to the meeting of the Intergovernmental Forum on Chemical Safety (IFCS) in Ottawa, 10-14 February 1997. The IFCS took note of the progres report of the focal points. It encouraged ILO and UN-CETDG to continue the work and to propose suitable sets of criteria and cut-off values for the different hazards - aiming to complete by the end of 1997.

Purpose of harmonization

It is necessary to keep in mind the purposes and aims of the harmonization proces.

Bearing in mind that Agenda 21 was adopted at UNCED in Rio in 1992 by all member states at high governmental level and as well by all international organisations represented, the question is not whether the criteria for physical and chemical hazards should be harmonized. The duty to carry out in achieving the goal is to develop on expert level hazards and hazard levels and to elaborate suitable proposals for harmonized criteria and cut-off values.

This has been underlined in the meantime by the two meetings of the IFCS and by other international bodies involved in the proces. A review of the progres achieved in implementation of the whole agenda 21 will be made at a special session of the UN General Assembly in June 1997 - UNGASS).

Furthermore the time scale was fixed by the UNCED and confirmed by IFCS; so by the end of 1997 finally agreed proposals are awaited from the focal points. The focal point for the physical-chemical hazards is ILO, the practical work is carried out by the JWG.

It also has to be mentioned that the IFCS in Ottawa in February 1997 clearly favoured a non binding instrument for the implementation of the global harmonized approach for classification and labelling. No new binding instrument - like a convention - is envisaged at present, but implementation through existing international and national regulation regimes in expected.

The high tasks to achieve requires interested and participating countries and organisations to spend more resources on the issue and requires delegates to work in the meetings of the JWG on the basis of coordinated positions of their governments and organisations.

Status of work

As far as criteria for the flammability of gases, liquids and solids are concerned, the work on the proposals for harmonized criteria was finished by the JWG in July 1996 and the proposals were adopted by the UN-CETDG in December 1996 for submission to the relevant international fora.

The proposals were then reported via ILO - as Focal Point - to the IFCS. They are envisaged to be part of the final report of the JWG when the proposals for criteria and cut-off values for the different physical-chemical hazards have been agreed on a consensus basis by the end of the year.

It is therefore suggested not to reopen the debate on them, and to keep them as already finished proposals resulting from the work of the biennium 1995/1996.

The same status was reached for the definitions and criteria for the physical state of gases, which are needed for the differentiation of technical requirements in downstream legislation - especially for the transport of dangerous goods.

Concerning the flammability of Aerosols the JWG decided to include a proposal, but work could not be finished in the past biennium. This was adopted by UN-CETDG in December 1996.

Consensus was close for the criteria for the different reactivity hazards of chemicals in several areas, but due to time reasons and extensive discussions on some other criteria, the situation seems not that clear. Work has to move on. To facilitate work clear steps to take in the two meetings of the JWG could be agreed.

Steps to take

AEROSOLS

For the flammability of aerosols the JWG is invited to agree on a definition and a set of criteria and cut-off values.

Discussions on a suitable definition already started in the meeting in July 1996. So consensus on the definition could be envisaged for the meeting in July 1997.

Discussions on the criteria for flammability of aerosols itself could not be started in the past biennium. So to get to a consensus on a proposal for global harmonization already in the meeting of the JWG in july 1997 might be ambitious. In order to move forward in practical steps, it is suggested that some basic principles are established in the meeting in July 1997 and to envisage a consensus for the criteria and cut-off values for the meeting in December 1997.

REACTIVITY

For some criteria and cut-off values for reactive dangerous properties of chemicals discussions seemed to be - almost - finished in the past biennium. So it is suggested that a consensus can be achieved in the meeting of the JWG in July 1997.

For the remaining - still deeply discussed - criteria and cut-off values technical discussions have to continue. To move forward in practical steps it is suggested that some basic principles are established within the meeting in July 1997 and to envisage to achieve a consensus at the meeting in December 1997.

Resume

So that concrete progress can be made on the outstanding issues all delegates of the JWG are invited to bear in mind the high advantages of a globally harmonized system for classification and labelling, the high task and confidence given to the JWG by the international fora involved in the implementation of agenda 21, chapter 19, and to work in the spirit of good cooperation taking into account the high political priority given to this work in the UNCED and in the second meeting of the IFCS in february 1997 in Ottawa.

Proceeding the way this document offers, might not be the pure scientific approach, but due to time reasons and to the political situation (including the request of the UNCED and the IFCS to finish work in 1997 on the proposals for the criteria and cut-off values for the different hazards chemicals may present for the globally harmonized system of classification and labelling and its application by the year 2000), the way ahead should be made in reasonable and practical steps.

Furthermore there will be only two meetings of the JWG, in July and December 1997. Therefore to avoid too much work for the december meeting, issues easy to settle should be agreed by consensus in july 1997. Work in December could than concentrate on the remaining, more complicated, open questions. This way of proceeding also allows member states and delegations to have a look back home on the remaining unsolved areas and develop concrete proposals for compromises to achieve an agreement by consensus in decembre 1997.

Questions and criteria left open or without consensus at the meeting of the JWG in December 1997 will need further consideration and and may lead to discussions and decisions on other levels and in other international or intergovernmental fora.

So these decisions might be taken outside the JWG and outside the UN CETDG, but could nevertheless lead to the need for implementation in downstream legislation inclusive e.g. for transport of dangerous goods. So it is suggested to try as much as possible to reach consensus on expert level in the JWR.

Additional and more concrete documents on the three „blocks“ of criteria and hazards:

- for the definition and criteria for flammable aerosols,
- for some reactivity criteria, where consensus is already close, and
- for the remaining, but more difficult, criteria,

- as mentioned above - aimed to facilitate discussions and to prepare the way for agreement by consensus are submitted separately (see ST/SG/AC.10/C.3/1997/27, -/C.3/1997/28 and -/C.3/1997/29).

Technical documents related to the questions to discuss and to the decisions to take should be submitted by delegations from member states or international organisations.

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Secretariat

Distr.
GENERAL

ST/SG/AC.10/C.3/1997/27
25 April 1997

Original : ENGLISH

COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS

Sub-Committee of Experts on the Transport of Dangerous Goods

(Thirteenth session, Geneva, 7-17 July 1997, agenda item 5 (b))

GLOBAL HARMONISATION OF SYSTEMS OF CLASSIFICATION AND LABELLING OF CHEMICALS

Joint ILO/UN Working Group on harmonized classification criteria for flammability and reactivity

Aerosols

Presented by the Chairman of the working group

Aerosols, Definition and criteria for flammability

Aim of document

This document offers guidance on a practical way of proceeding in the discussions to be held on aerosols and the related classification criteria for flammability. The detailed discussion should take place on the basis of documents presented by experts of member states and by other organisations concerned. Those have already been submitted to previous meetings or may be submitted at the forthcoming session.

Starting point

Based on the decisions made in previous meetings of the Joint ILO/UN Working-Group (JWG) and of the UN Sub-Committee and Committee of Experts on the Transport of Dangerous Goods, discussions on the flammability of Aerosols could start with the question of a suitable definition for aerosols and thereafter move on to the criteria and cut-off values for their flammability.

Definition of Aerosols

The following documents from previous discussions have to be taken into consideration:

- ST/SG/AC.10/23/Add.4,
- ST/SG/AC.10/R.509 (Germany),
- ST/AG/AC.10/R.532 (Norway),
- ST/SG/AC.10/R.764 (United Kingdom).

New documents specific to this item:

- ST/SG/AC.10/C.3/1997/30 (Germany), Definition of Aerosols

Three existing definitions have been named and cited in previous discussions:

- definition of the UN-Recommendations, 9th edition, chapter 1.17.1, Note, and Special Provision 190,

- definition in the ICAO Technical Instructions, chapter 2.5.1,

- definition in the Directive 75/324/EEC, as amended by Directive 94/1/EC.

All three definitions deal with Aerosols as Aerosol-dispensers, that is with compressed packaged products to be sprayed for use. In scientific terms the meaning of an aerosol is different. There, aerosol means mixtures of agents (e.g. vapours, mists, dusts, liquids) with air to be considered for their oral intake by people, animals or for application for medical purposes.

As the proposal for a global hamonized set of classifcation criteria should be prepared to be suitable for many protection purposes and should - after acceptance and implementation - be used for different regulatory purposes; this could lead to misunderstandings.

Therefore the JWG is invited to discuss, if for clarification the term **„Aerosol"** should be defined in such a way as to avoid misunderstandings, e.g. in the way to precise the wording of the definition by ***„Aerosol dispensers"*** or by another suitable wording.

For the definition itself the JWG is invited to discuss whether one of the three existing definitions should be taken for the harmonization proposal or whether a merger of all three should be developed. For the latter case delegations are invited to submit working documents in due time.

Furthermore views are requested on whether:

- the definition should also cover *2037 Receptacles, small, containing gas*,

- the limit of 1000 ml should be included (see UN-Recommendations, 9th edition, Special Provision 197),

- the limitation to receptacles, non refillable, should be kept (as modern technologie makes refilling possible e.g. in controlled circumstances, taking into account the need for reduction of wastes and the need for recycling.

In the discussions it could also be checked if the different possible mixtures of contents in aerosol dispensers need specific measures to be taken into account for the harmonization proposal. In particular the following types could appear:

Propellant gas	**Agents**
non flammable gas	non flammable
non flammable gas	flammable solid or mixture(s) of flammable solid(s)
non flammable gas	flammable liquid or solution(s) of flammable liquid(s)
flammable gas	non flammable
flammable gas	flammable solid or mixture(s) of flammable solid(s)
flammable gas	flammable liquid or solution(s) of flammable liquid(s)

Note 1.: Aerosols with toxic or corrosive components could be included in the definition of aerosols due to the pression of the propellant agent; toxic or corrosive properties to be classified according to the future OECD-proposals on toxicity and skin corrosivity.

Note 2.: Oxidising properties could be taken into account when the JWG has agreed on the criteria and cut-off values for Oxidisers.

It is suggested to discuss

- whether the different mixtures should be treated the same way or differently,
- whether there should be a percentage limit, and - if yes - which one,
- whether there should be an additional mass limit,
- whether a test and criteria should be included (e.g. like in ICAO-TI, chapter 2.5.2 or in directive 94/1/EC), or
- whether a combination of both could be suitable.

For Aerosols the purposes of handling, storage, transport and use have to be taken into account as well as consumer protection.

DRAFT

Table 5: Definition for „Aerosols" and criteria for their flammability

((to be developed after discussions))

UNITED NATIONS

ST

Secretariat

Distr.
GENERAL

ST/SG/AC.10/C.3/1997/28
25 April 1997

Original : ENGLISH

COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS

Sub-Committee of Experts on the Transport of Dangerous Goods

(Thirteenth session, Geneva, 7-17 July 1997, agenda item 5 (b))

GLOBAL HARMONISATION OF SYSTEMS OF CLASSIFICATION AND LABELLING OF CHEMICALS

Joint ILO/UN-Committee Working Group on harmonized classification criteria for flammability and reactivity

Criteria for reactive properties

Presented by the Chairman of the working group

Criteria for reactive properties, close to consensus

Introduction

This document is aiming at facilitating discussions for some criteria in the field of reactivity of chemicals. It is especially designed for those criteria where in the meetings of the Working Group on Reactivity in the past biennium discussions have already moved forward and where these discussions seem to be almost finished.

So concrete steps to move forward are near and it is suggested to agree on a consensus on a proposal for harmonized criteria and cut-off values during the meeting of the Joint ILO/UN Working-Group (Joint Working Group) in July 1997.

The following hazards may be covered by this part of the work:

- spontaneous combustion of chemicals (pyrophoric, self-heating),

- water reactive properties (emission of flammable gases in contact with water),
- oxidising properties of solids and liquids,
- oxidising properties of gases,
- organic peroxides.

The Joint Working Group is invited to proceed this way and to try to reach consensus on proposals for harmonized criteria and cut-off values.

Spontaneous cumbustion

Documents to consider:

document from previous meetings: ST/AG/AC.10/23/Add.4.

new documents: (to be completed at the meeting)

Recalling the discussions in the working groups meetings in july 1995 and 1996 and in December 1995, most delegations expressed support for basing the proposal for harmonization on the existing criteria and cut-off values of the UN Manual of tests and criteria, part III, section 33.3 (see ST/SG/AC.10/11/Rev.2).

Unless there are no new documents submitted and no new important points to discuss, it is suggested to agree by consensus on the criteria and cut-off values as laid down in the Manual, section 33.3, and to attach to the report of the Joint Working Group a table with a short resume of the agreed set of criteria and cut-off values with reference to the test methods.

Water reactive properties (emission of flammable gases in contact with water)

Documents to consider:

documents from previous meetings:

- ST/SG/AC.10/23/Add.4,
- ST/SG/AC.10/C.3/R.732 (Canada).

new documents: (to be completed at the meeting).

A situation similar to the one for spontaneous combustion seems to be achieved for the criteria for the emission of flammable gases from substances, mixtures and solutions, when getting in contact with water.

Unless there are no new documents submitted and no new important points to discuss, it is suggested to agree by consensus on the criteria and cut-off values as laid down in the Manual of tests and criteria, part III, section 33.4, and to attach to the report of the Joint Working Group a table with a short resume of the agreed set of criteria and cut-off values with a reference to the test methods.

In this context a question could be discussed which Canada raised in previous meetings and in the UN-CETDG (see ST/SG/AC.10/C.3/R.732). This is related to the emission of gases in contact with water, which are non flammable, but toxic or corrosive, or which are flammable, but have additionally toxic or corrosive hazards.

The Joint Working Group may wish to start discussions on this item. It may be considered whether this is a question more related to the toxic or corrosive properties of gases - dealt with in OECD as focal point - or more related to the fact of a possibly quick emission of those gases in case of contact with water.

An indication could be given, whether criteria for such hazards should be included in the global harmonized approach for classification. Discussions on possible technical consequences in downstream legislation may not be a suitable task for the Joint Working Group.

Oxidizing properties of solids and liquids

Documents to consider:

document from previous meetings:

- ST/SG/AC.10/23/Add.4

new documents: (to be completed at the meeting).

Taking into account the commitments made by delegations in the meeting in the past biennium there seems to be another situation similar - to the two mentioned before for the oxidizing properties. It was pointed out that for the time being only the UN-Recommendations have a complete set of test methods for solid and liquid oxidizers.

Unless there are no new documents submitted and no new important points to discuss, it is suggested to agree by consensus on the criteria and cut-off values as laid down in the Manual of tests and criteria, part III, section 34.4, and to attach to the report of the Joint Working Group a table with a short resume of the agreed set of criteria and cut-off values with a reference to the test methods.

Additionally the Joint Working Group may wish to have a short look at the fact, that many solid ans liquid oxidizers - in particular solutions of solid oxidisers - are not only classified according to the criteria and cut-off values, but due to scientific and technical

experience. It has to be recalled, that the test methods in section 34.4 have been developed in recent years when solid and liquid oxidizers had been classified years before on the basis of experience. Although this problem may also exists for some classified chemicals or articles with other hazards, for oxidizing solids and liquids it might be of a certain relevance.

Oxidizing properties of gases

Documents to consider:

documents from previous meetings:

- ST/SG/AC.10/23/Add.4
- ST/SG/AC.10/C.3/R.709 (Germany).

new documents: (to be completed at the meeting).

Consensus seems to be close to base the proposal for harmonized criteria on the existing system of the UN-Recommendations on the transport of dangerous goods. However some concern was expressed and the Joint Working Group may wish to shortly discuss the matter in the light of document ST/SG/AC.10/C.3/R. 709 from Germany and of the meeting of the ISO working group in March 1997.

Ammonium nitrate and ammonium nitrate fertilizers

Documents to consider:

documents from previous meetings:

- ST/SG/AC.10/23/Add.4
- ST/SG/AC.10/C.3/R.749 (Germany);

new documents: (to be completed at the meeting)

- ST/SG/AC.10/C.3/1997/8 (EFMA)
- ST/SG/AC.10/C.3/1997/32 (Germany)

In previous meeting of the working group on reactivity some concern was expressed on whether to include ammonium nitrate and -in particular - ammonium nitrate fertilizers completely in the harmonization proces for the different criteria they may meet or to consider them separately in the sense of a special group. It is suggested to come to a consensus at the meeting in July 1997.

Organic peroxides

Documents to consider:

documents from previous meetings

- ST/SG/AC.10/23/Add.4
- ST/SG/AC.10/C.3/1997/11 (CEFIC)
- ST/SG/AC.10/C.3/1997/12 (CEFIC)
- ST/SG/AC.10/C.3/1997/32 (Germany)

new documents: (to be completed at the meeting).

TESTING METHODS AND CRITERIA

Reviewing the reports of previous meetings of the Joint Working Group and the UN-CETDG, there seems to remain no serious objection to basing the proposal for harmonization on the criteria and cut-off values for organic peroxides and the UN test methods as laid down in the Manual of tests and criteria, part II, and to add a suitable table to the report.

LOWER CUT-OFF VALUE

One question remains concerning the minimum content of active or available oxigen in a peroxid to decide, if the complete test procedure has to be applied (see document ST/SG/AC.10/C.3/R.775) */.

In the UN Recommendations a value of 1 % and in directive 67/548/EEC a value of 0,5 % is mentioned. Both values are not far away from each other. So the Joint Working Group is invited to discuss whether there are significant safeyt reasons to include both values - leading to two hazard levels - in the global harmonized approach or whether which of both values would be suitable for a single hazard level.

Self-reactive properties

Documents to consider:

documents from previous meetings:

- ST/SG/AC.10/23/Add.4.

new documents: (to be completed at the meeting).

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*/ Note by the secretariat: This document has been withdrawn.

Consensus seems to be close to include in the global harmonized approach the same tests and criteria as for organic peroxides and to add a suitable table to the report. This would reflect the current situation in the UN-Recommendations.

Testing conditions for solids

Linked especially to the criteria mentioned above is the question, in which form the substance or mixture (such as preparations, products and wastes) should be subject to the different testing procedures for classification.

One way often highlighted is the way to rely only on the intrinsic properties of the substance, product or waste. This could mean to change the physical form of the substance for testing and to test in the most reactive physical state, e.g. grinded, powdered. From a scientific point of view this might lead to the most basic and precise knowledge of reactive hazards. From a practical point of view this could lead to a hugh extension of cost effective testings.

Furthermore this could lead to the situation that the classification - only based on the test results - is followed by a too strict application of downstream legislation e.g. for storage, supply, transport, even if the substance or product may not be appearing there in the form as tested.

On the other hand to test a substance or mixture only in the form as presented - e.g. for storage, supply, transport - could be too liberal in some cases and could lead to a reduction of protection in some areas such as worker protection, handling or use.

So it is suggested to discuss this issue taking into account all protection purposes of the global harmonized system for classification and labelling and to work out a solution providing the necessary information for classification, but avoiding a too high burden in cost effective testing.

The Joint Working Group is invited to discuss the following questions:

Could a test in the form as presented (e.g. for storage, supply, transport) function as a basic test?

Could a positive test result then lead to a classification as dangerous for all protection purposes and could further testing be necessary only, if

- no positive result occured in the basic testing, but
- the substance or mixture is designed to be treated (e.g. for handling, use) in another physical form (e.g. grinded, powdered), and
- scientific or technical experience leads to the conclusion

- that a positive result may be obtained when tested in this form,

- that a test result leading to a higher hazard level may be obtained?

Could this further mean that then this test result obtained might lead to a limited classification only for the protection purpose in which this form of the substance, mixture or solution is designed for and really treated in e.g. handled, used (provided the tests, their results and the physical form tested are propperly documented)?

The Joint Working Group is invited to discuss these problems and to develop a consensus view as far as possible at the July meeting.

Relation of some reactivity criteria to criteria for explosive properties

Although a relationship could be seen between organic peroxides, self reactive substances and substances related to self reactive substances - especially as far as the test methods and criteria are concerned - a strong relationship exists as well between these groups of substances and some criteria of explosive properties. To avoid turning discussions upside down, it is suggested, to discuss criteria for such properties in conjunction with the general discussion of the proposals for harmonized criteria for explosive properties (see document ST/SG/AC.10/C.3/1997/29).

UNITED
NATIONS

ST

Secretariat

Distr.
GENERAL

ST/SG/AC.10/C.3/1997/29
25 April 1997

Original : ENGLISH

COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS

Sub-Committee of Experts on the Transport of Dangerous Goods

(Thirteenth session, Geneva, 7-17 July 1997, agenda item 5 (b))

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Joint ILO/UN Working Group on harmonized classification criteria for flammability and reactivity

Explosive properties

Presented by the Chairman of the working group

Introduction

Within the previous three meetings of the Joint Working Group, open and wide discussions on expert level took place and a lot of information was exchanged. Based on the documents submitted and the contributions of the delegations several problems and unsolved questions were identified. Discussions could not be finished in the past biennium and it seemed even to be difficult to agree by consensus on some basic principles for the proposals for suitable criteria and cut-off values.

In the discussions it was a clear that the test methods and criteria of the UN Manual of tests and criteria should form the basis for the global harmonized approach in this area. However there were misunderstandings and some delegations more or less disputed on possible downstream consequences of a future implementation of a - not even drafted - global approach for this group of criteria.

Furthermore it was not clear whether the approach should only focus on class 1 of the UN Recommendations or whether some explosive properties of chemicals of other „transport"-classes have to be taken into account.

Especially in this area the purposes and aims of the harmonization process as shown in ST/SG/AC.10/C.3/1997/26 should be borne in mind. The global harmonized approach is not linked to the transport of dangerous goods only, but should be suitable for further protection purposes such as handling, use, storage. So not only transport safety but also worker protection, handling safety, consumer protection etc. have to be taken into account.

In the different areas several classification systems have been established and especially differing downstream regulations have developed in the past. Some of them are familiar e.g. to the UN Recommendations system, some are different.

As on the one hand the aim of agenda 21, chapter 19, area B, is clearly the harmonization of these different classification systems, the aim on the other hand can't be the complete harmonization of the implemented systems for downstream consequences being derived from the classification. So the Joint Working Group is invited to agree that:

- the UN classification system - especially class 1 - is one suitable way of implementation for criteria for explosive properties,

- the UN classification system - especially class 1 - should remain the way of implementation for criteria for explosive properties for the transport of dangerous goods,

- the UN classification system - especially class 1 - cannot be required to be the only way of implementation for criteria for explosive properties in all regulatory systems,

- other ways of implementation in other regulatory systems have to be recognized and respected the ongoing technical work on proposals for harmonized criteria,

- that therefore the proposals for the criteria for explosive properties should be based on the UN recommendations but should be abstracted in such a way that implementation in all regulatory systems concerned is facilitated,

- that the work of the Joint Working Group therefore should concentrate on hazards, hazard levels, internationally accepted and applied test methods, criteria and cut-off values for explosive properties.

Definition problems

Scope of proposals

Based on these principles it is suggested to first establish suitable definitions for the hazards and criteria involved. Related to this might be the question, how far explosive properties of some groups of substances, mixtures and solutions (such as preparations and wastes) and if and how far articles should be taken into account.

In previous discussions of the Joint Working Group it was stated, that explosive properties do not only exist „within class 1 of the transport system", and that explosive properties exist outside of that scope and purpose. It was said that those explosive properties covered by class 1 for transport are mainly related to substances, mixtures, solutions and articles designed, developed, manufactured and/or especially intended for explosive or pyrotechnic purposes.

But outside of that scope and purpose explosive substances, mixtures and solutions not designed, developped, manufactured and/or intended for explosive purposes might nevertheless show explosive properties according to the criteria.

So the Joint Working Group is invited to agree for its work,

- that in principle all explosive properties should be taken into account for the proposals for the harmonized criteria,
- that a clear distinction might be suitable between:
  - substances designed, manufactured, developped and/or especially intended for explosive or pyrotechnic effects and
  - other substances - not designed, manufactured, developed and/or especially intended for such purposes - but presenting explosive properties (additionally to other hazards they may present),
- that the first group to consider should include the substances, mixtures and solutions designed, developed, manufactured and/or intended for explosive or pyrotechnic effects,

and to discuss,

- whether - and how far - articles containing such substances, mixtures and solutions should be included in the harmonized system,
- whether - and how far - desensitized/phlegmatized substances, mixtures and solutions should be included as well,

- whether substances, mixtures, solutions and articles, which are too dangerous for transport, but which are handled, stored, used and transported in enclosed areas, should be included,

- whether - and how far - articles containing different dangerous goods of different hazards like technical equipment and appliances should be taken into account,

- whether compatibility aspects of substances and articles concerned should be included in the global harmonized approach.

If the Joint Working Group agrees to this way forward it could start to discuss as one suitable distinction and presentation the following thought starter:

Substances, mixtures, solutions and articles with explosive properties (including related groups)

Substances, mixtures, solutions (and articles ?) designed, developped, manufactured and/or intended for explosive or pyrotechnic effects - explosive substances (and articles?)		**Substances, mixtures and solutions not designed, developped, manufactured and/or intended for such purposes, but presenting explosive properties (substances with explosive properties?)**	
Definition An explosive substance is a solid or liquid substance or a mixture (or solution ?) of substances which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to surroundings: Pyrotechnic substances are included even when they do not evolve gases. A pyrotechnic substance is a substance or a mixture (or solution) of substances designed to produce an effect by heat, light, sound, gas or smoke or a combination of these as the result of non-detonative self-sustaining exothermic chemical reaction. (An explosive article is an article containing one or more explosive substances. ?) Note: A substance which is not itself an explosive substance, but which can form an explosive atmosphere of gas, vapour or dust is not included. Tests and criteria: test series (2, 3 and 4?)		**Definition** [A substance with explosive properties is a substance, mixture or solution, which is not designed, developped, manufactured and/or intended to be an explosive substance, but which can produce by chemical reaction explosive effects as to cause damage to surroundings] (Information: Some organic peroxides, some self-reactive substances and some substances related to self-reactive substances may be covered - additionally to their basic hazards - by this part.) Note: A substance which is not itself an explosive substance and is not designed, developped, manufactured and/or intended to be an explosive substance, but which can form an explosive atmosphere of gas, vapour or dust is not included. Tests and criteria: (test series 2, 3 and 4?)	
Hazards and criteria		**Hazards and criteria**	
Mass explosion hazard Definition: A mass explosion is one which affects almost the entire load (stored quantity ?) virtually instantaneously	Tests and criteria (test series 6 ?)	Mass explosion hazard Definition: A mass explosion is one which affects almost the entire load (stored quantity ?) virtually instantaneously	Tests and criteria (test series 6 ?)

Projection hazard, but not mass explosion hazard	Tests and criteria (test series 6 ?)		(not relevant?)	
Fire hazard and either a minor blasting hazard or a minor projection hazard or both, but no mass explosion hazard Definition This comprises substances (and articles) which -give rise to considerable radiant heat; or -burn one after another, producing minor blast or projection effects or both.	Tests and criteria (test series 6 ?)		Fire hazard and either a minor blasting hazard or a minor projection hazard or both, but no mass explosion hazard Definition This comprises substances which -give rise to considerable radiant heat; or -burn one after another, producing minor blast or projection effects or both.	Tests and criteria (test series 6 ?)
(No significant explosion hazard) Definition This comprises substances (and articles) which present only a small hazard in the event of ignition or initiation (during transport?, handling?, storage?). The effects are largely confined within the package and no projection of fragments of appreciable size or range is to be expected. An external fire should not cause virtually instantaneous explosion of almost the entire contents of the package.	(Test series 6 ?)		(No significant explosion hazard) Definition This comprises substances which present only a small hazard in the event of ignition or initiation (during transport?, handling?, storage?). The effects are largely confined within the package and no projection of fragments of appreciable size or range is to be expected. An external fire should not cause virtually instantaneous explosion of almost the entire contents of the package.	(Test series 6 ?)

Mass explosion hazard of very insensitive substances Definition This comprises substances which have a mass explosion hazard but are so insensitive that there is very little propability of initiation or of transition from burning to detonation under normal conditions of (transport?, storage?) The probability of transition from burning to detonation is greater when large quantities are (e.g.) carried in a ship (or stored?)	(Test series 5 ?)		(relevant?)	
(Extremely insensitive articles with no mass explosion hazard Definiton This comprises articles which contain only extremely insensitive detonating substances and which demonstrate a negligible probability of accidental initiation or propagation. The risk is limited to the explosion of a single article.	(Test series 7 ?)		(relevant?)	